MEMORY AND LEARNING

The material which follows is a chapter entitled, “Memory and Learning”, from the following document:

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The full document includes sections on:
- Development and Learning
- Cognitive Factors in Learning
  - Development of the Mind
  - Memory and Learning
  - Transfer of Learning
- Affective Factors in Learning
  - Emotions
  - Self-concept
  - Motivation
- Instructional Factors in Learning
  - Discipline
  - Personal Qualities of Teachers
  - External Conditions
  - Individual Differences
- Values and Learning
- Theories of Learning

If you are interested in obtaining a copy of the full document, please contact the first author through the Department of Educational and Counseling Psychology, School of Education, Andrews University, Berrien Springs, MI 49104-0100.
MEMORY AND LEARNING

This chapter analyzes the Christian perspective of human memory and its place in the learning process. As God’s creature, the person is expected to develop all mental capabilities, including the memory, to the highest possible level. Of course, like other mental faculties, memory should be developed to render a faithful tribute of worship toward its Creator.

Some consideration is given to attention and sensory reception because they are prerequisite conditions of the memory process. The Bible and E. G. White’s writings emphasize the importance of the attending process, because the knowledge to be learned has to be perceived, before it is stored in memory. Nothing will be recalled which had not been previously passed through the sensory register. These prerequisites imply, to a certain degree, the need to use value judgments and exercise the will, since attention is a process of selecting some of many possible inputs.

Additionally, activities of selection and decision, which require the operation of the will, are needed as control processes when information is stored in memory. For example, rehearsal improves the recall. For this reason the Bible probably insists on repeating information and monitoring it as a means to affirm learning.

According to the Christian conception of the memory process, God assigns to the learner the responsibility for encoding and recalling the knowledge. Forgetting is not excusable because a memory deficit indicates that the process was superficial. Therefore, the learner should generate the greatest effort in order to produce the best retention. However, mechanical memory efforts are not recommended for this purpose. Thinking and reasoning skills should organize, elaborate, and attribute meaning to the material being stored for future retrieval.

The Christian approach to learning recommends a conscientious study of Biblical truths in addition to following healthy practices pointed out in this chapter and avoiding practices that are harmful to memory.

As for other cognitive processes, Christian students should take advantage of the special assistance that the Holy Spirit offers in order to improve their memory skills.

There is advantage in exercising memory skills from childhood. If the revealed truth can be stored during these impressible years, all meaningful knowledge will be integrated in a network, where each new unit of information will be associated with the old one, which is Scripture based, establishing firmly in memory the knowledge to be learned.
MEMORY AND LEARNING

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ATTENTION AND SENSORY RECEPTION

From an information processing perspective, human learning requires attention, perception, encoding, storage, and retrieval. Attention is a necessary prerequisite of learning. Students are more likely to recall important text elements than less important ones. The importance of text material affects subsequent recall through differential attention.
Perception, or pattern recognition, refers to the meaning attached to environmental inputs received through the senses.

The Scriptures assigns manifest importance to the processes of attention and perception, especially when they are addressed toward divine truths.

*Listen, children, to a father’s instruction, and be attentive, that you may gain insight.* Proverbs 4:1, NRSV.

*Sons, listen to what your father teaches you. Pay attention, and you will have understanding. What I am teaching you is good, so remember it all.* Proverbs 4:1, 2 TEV.

*Listen, son of mine, to what I say. Listen carefully.* Proverbs 4:20, LB.

*Son, pay attention and listen to my wisdom and insight. Then you will know how to behave properly, and your words will show that you have knowledge.* Proverbs 5:1, 2, TEV.

*Who hath ears to hear, let him hear.* Matthew 13:43, KJV.

*A wise man will hear, and will increase learning.* Proverbs 1:5, KJV.

*Consequently, faith comes from hearing the message, and the message is heard through the word of Christ.* Romans 10:17, NIV

*And they have turned to Me the back, and not the face; though I taught them, rising up early and teaching them, yet they have not listened to receive instructions.* Jeremiah 32:33, NKJV.

*We must pay more careful attention, therefore, to what we have heard, so that we do not drift away.* Hebrews 2:1, NIV

All the powers of the mind should be exercised, all the faculties cultivated. Perception, judgment, memory, and all the reasoning powers should have equal strength in order that minds may be well balanced. *MCP 441:2; 3T 33:0.*

**MEMORY**

**Importance of Memory**

Memory is an important mental faculty and as such it needs to be disciplined and exercised.

God does not want us to be content with lazy, undisciplined minds, dull thoughts, and loose memories. He wants every teacher to be efficient, not to feel satisfied with some
measure of success, but to feel his need perpetual diligence in acquiring knowledge. CT 506:1; CEd 52:1; FE 119:2; RH 06-21-87:13.

Those who embrace the truth should seek a clear understanding of the Scriptures and an experimental knowledge of a living Savior. The intellect should be cultivated, the memory taxed. All intellectual laziness is sin, and spiritual lethargy is death. 4T 399:1.

**Memory Processes**

**Memory Store**

Control (executive) processes direct the processing of information in working memory, as well as the movement of knowledge into and out of working memory. Control processes include rehearsal, predicting, checking, and monitoring. Control processes are goal directed. Rehearsal, or repeating information to oneself, can maintain information in working memory indefinitely. Biblical examples and direct inspired instructions recommend its regular practice.

*Only be careful, and watch yourselves closely so that you do not forget the things your eyes have seen or let them slip from your heart as long as you live. Teach them to your children and to their children after them.* Deuteronomy 4:9, NIV.

*Keep these thoughts ever in mind; let them penetrate deep within your heart.* Proverbs 4:21, LB.

*Wise people store up knowledge, but the mouth of the foolish is near destruction.* Proverbs 10:14. NKJV.

In listening to the sermon, let parents and children note the text and the scripture quoted and as much as possible of the line of thought, to repeat to one another at home. This will go far toward relieving the weariness with which children so often listen to a sermon, and it will cultivate in all a habit of attention and of connected thought. Ed 252:1.

The people were directed to commit to memory this poetic history [the blessing and the curses], and to teach it to their children and children’s children. It was to be chanted by the congregation when they assembled for worship, and to be repeated by the people as they went about their daily labors. It was the duty of parents to so impress these words upon the susceptible minds of their children that they might never be forgotten. PP 468:0.

**Encoding**
Encoding is the process of putting new (incoming) information into the information processing system and preparing it for storage in long-term memory. Encoding usually is accomplished by making new information meaningful and integrating it with known information in long-term memory.

*These commandments that I give you today are to be your hearts. Impress them on your children.* Deuteronomy 6:6, 7, NIV.

*Let your loyalty and good faith never fail; bind them about your neck, and inscribe them on the tablet of your memory.* Proverbs 3:3, REB.

*These commandments which I give you this day are to be remembered and taken to heart; repeat them to your children, and speak of them both indoors and out of doors, when you lie down and when you get up. Bind them as sign on your hand and wear them as a sign on your hand and wear them as a pendant on your forehead; write them on the doorposts of your houses and on your gates.* Deuteronomy 6:6-9, REB.

**Forgetting**

People must process information in some direct way. According to this theory, when a process requires more effort it will produce better retention. The memory deficits reveal shallow processing. From a Biblical perspective, each person is responsible for forgetting and recalling, particularly when divine truth is the subject.

*Be careful that you do not forget the Lord, who brought you out of Egypt, pit of the land of slavery.* Deuteronomy 6:12, NIV.

*Only be careful, and watch yourselves closely so that you do not forget the things your eyes have seen or let them slip from your heart as long as you live. Teach them to your children and to their children after them.* Deuteronomy 4:9, NIV.

*Though all this has befallen us, we do not forget you and have not been false to your covenant.* Psalm 44:17, REB.

*Do not forget or turn a deaf ear to what I say.* Proverbs 4:5, NEB.

*Don’t let the excitement of being young cause you to forget about your Creator.* Ecclesiastes 12:1, LB.

Many feel that no blame should be attached to forgetfulness. This is a great mistake. Forgetfulness is sin. It leads to many blunders and to much disorder and many wrongs. Things that should be done ought not to be forgotten. The mind must be tasked; it must be disciplined until it will remember. 3T12:1.
Recalling

According to information processing theories, once associations are learned, they are never completely forgotten. If there are no interferences, stored elements can be retrieved. Recalling permanent principles is a goal of Christian learning.

*Teach a child how he should live, and he will remember it all his life.* Proverbs 22:6, TEV.

*Son, don’t forget what I teach you. Always remember what I tell you to do.* Proverbs 3:1, TEV.

*My father would teach me. He would say, “Remember what I say and never forget it. Do as I tell you, and you will live.* Proverbs 4:4, TEV.

*Remember the Sabbath day, to keep it holy.* Exodus 20:8 KJV

*Remember this, and be assured; recall it to mind, you transgressors. Remember the former things long past, for I am God, and there is no other.* Isaiah 46: 8,9, NASB.

*Recall the wondrous deeds that he has wrought, his portents, and the judgments he has uttered.* 1 Chronicles 16:12, NAB.

*He would deal mercifully with our fathers, calling to mind his solemn covenant.* Luke 1: 72, NEB.

*Then Peter remembered the word Jesus had spoken.* Matthew 26:75, NIV.

*Remember the word that I said unto you.* John 15:20, NKJ.

*Remember the theme of my gospel: Jesus Christ, risen from the dead, born of David’s line.* 2 Timothy 2:8, REB.

*And I will make every effort so that after my departure you may be able at any time to recall these things.* 2 Peter 1:15, NRSV.

*I will remember your great deeds, Lord; I will recall the wonders you did in the past.* Psalm 77:11, TEV.

**Development of Memory**

**Development During Childhood**
It is important that memory work be done during the childhood years because it is then that the mind is most susceptible. The truths stored at the time will be retained for life and thus useful for the greatest span of time.

*My son, do not forget my teaching, but keep my commands in your heart.* Proverbs 3:1, NIV.

*Remember now your Creator in the days of your youth, before the difficult days come, and the years draw near when you say, “I have no pleasure in them.”* Ecclesiastes 12:1, NKJV.

It is in youth that the affections are most ardent, the memory most retentive, and the heart most susceptible to divine impressions; and it is during youth that the mental and physical powers should be set to the task in order that great improvements may be made in view of the world that now is, and that which is to come.

The amount of valuable knowledge that can be acquired by young men and women can hardly be estimated. The youth may acquire that which gold cannot buy, by cherishing a pure, strong purpose in endeavoring to be all that God designed they should be. The mind should be trained to dwell upon right themes of thought. They should study the Scriptures, and bring into daily life the divine rules which God has laid down for their guidance. He who had grown old in the service of God may find his mind a blank in regard to the things that are happening about him, and recent transactions may soon pass from his memory; but his mind is all awake to the scenes and transactions of his childhood. *SD 78:3, 4; YI 10-25-94:4, 5.*

Since He (Christ) gained knowledge as we may do, His intimate acquaintance with the Scriptures shows how diligently His early years were given to the study of God’s word.

Every child may gain knowledge as Jesus did. As we try to become acquainted with our heavenly Father through His word, angels will draw near, our minds will be strengthened, our characters will be elevated and refined. We shall become more like our Savior. *DA 70:2, 4.*

Evening and morning join with your children in God’s worship, reading His word and singing His praise. Teach them to repeat God’s law. Concerning the commandments the Israelites were instructed: “Thou shalt teach them diligently unto thy children, and shalt talk of them when thou sittest in thine house, and when thou walkest by the way, and when thou liest down, and when thou risest up.” Accordingly, Moses directed the Israelites to set the words of the law to music. While the older children played on instruments, the younger ones marched, singing in concert the song of God’s commandments. In later years they retained in their minds the words of the law which they learned during childhood. *CG 523:5, RH 09-08-4:11.*
It may seem that the teaching of God’s word has but little effect upon many minds and hearts; but if the teacher’s work has been wrought in God, some lessons of divine truth will linger in the memory of even the most careless. *6T* 159:2.

Their minds [children’s] should be trained to think, their memories taxed to remember their appointed work; and in the training to habits of usefulness in the home, they are being educated in doing practical duties appropriate to their age. *CG* 295:3; *CT* 149:2; *FE* 369:1; *MCP* 287:4; *SpTEd* 223:1.

**Factors Beneficial for the Development of Memory**

The study of the Scriptures is the best aid for improving the memory. The Holy Spirit prompts the retrieval of truth when we are doing God’s work. Putting words to music and singing and performing them are very effective memory devices, since they maintain information in working memory. Other resources, such as the use of object lessons, associations, and illustrations, activate control processes which direct the processing and storage of information in memory. Physical welfare promoted by bodily exercise, habits of temperance, and regularity of rest, aid the functioning of the memory.

**Study of the Scriptures**

*Remember these commands and cherish them. Tie them on your arms and wear them on your foreheads as a reminder.* Deuteronomy 11:18, TEV.

*Teach them [God’s commands] to your children. Talk about them when you are at home and when you are away, when you are resting and when you are working.* Deuteronomy 11:19, TEV.

The Bible is the best book in the world for giving intellectual culture. Its study taxes the mind, strengthens the memory, and sharpens the intellect more than the study of all the subject that human philosophy embraces. *GW* 100:0.

If medical students will study the word of God diligently, they will be far better prepared to understand their other studies; for enlightenment always comes from an earnest study of the word of God. Nothing else will so help to give them a retentive memory as a study of the Scriptures. *CT* 483:1; *MM* 69:3. *[Advice given to medical students. The principle can apply to other students.]*

Be more desirous of practicing the virtues of Christ’s character than of advancing in lines of study. Advancement in learning of the great Teacher will make your mind more fruitful in every good work. Your memory will be strengthened to retain the essential science of education. *Lt* 36, 1901.
The Assistance of the Holy Spirit

*But your Advocate, the Holy Spirit whom the Father will send in my name, will teach you everything, and will call to mind all that I have told you.* John 14:26, NEB.

God will flash the knowledge obtained by diligent searching of the Scriptures, into their [servants of Christ’s] memory at the very time when it is needed. But if they neglect to fill their minds with the gems of truth, if they do not acquaint themselves with the words of Christ, if they have never tasted the power of His grace in trial, then they cannot expect that the Holy Spirit will bring His words to their remembrance. They are to serve God daily with their undivided affections, and then trust Him. *CSW 41:1; TSS 106:3.*

The servants of Christ were to prepare no set speech to present when brought to trial. Their preparation was to be made day by day in treasuring up the precious truths of God’s Word, and through prayer strengthening their faith. When they were brought into trial, the Holy Spirit would bring to their remembrance the very truths that would be needed. . . . *DA 335:1; ML 45:3.*

A daily, earnest striving to know God, and Jesus Christ whom He has sent, would bring power and efficiency to the soul. The knowledge obtained by diligent searching of the Scriptures, would be flashed into the memory at the right time. But if any had neglected to acquaint themselves with the words of Christ, if they had never tested the power of His grace in trial, they could not expect that the Holy Spirit would bring His word to their remembrance. *DA 355:2; ML 45:4.*

Association and Illustration

*The institutions of human society find their best models in the word of God. For those of instruction, in particular, there is no lack of both precept and example. Lessons of great profit, even in this age of educational progress, may be found in the history of God’s ancient people.*

By the use of figures and symbols the lessons given were illustrated, and thus firmly fixed in the memory. *FE 95:1, 4; RH 10-30-00:1, 4.*

The use of object lessons, blackboards, maps, and pictures, will be an aid in explaining these lessons, and fixing them in the memory. *CG 515:1; Ed 186:1; MCP 194:2.*

*Fix these words of mine in your heads and minds; tie them as symbols on your hands and bind them on your foreheads. . . Write them on the doorframes of your houses and on your gates.* Deuteronomy 11:18, 20, NIV.

*‘Go over in front of the Ark of the Lord your God as far as the middle of the Jordan, and let each of you take up a stone on his shoulder, one for each of the tribes of Israel. These stones are to stand as a memorial among you: in days to come, when your children ask*
what these stones mean, you will tell them how the waters of the Jordan were cut off before the Ark of the Covenant of the Lord; when it crossed the Jordan the waters of the Jordan were cut off. These stones will always be a reminder to the Israelites.’ Joshua 4:5-7, REB.

Kindergarten methods and object lessons from nature will be of great advantage in interesting the little ones. . . After the morning lesson, on pleasant days, teachers and children would take a long walk, and during the walk, by the banks of a river or in the grassy fields, a halt would be called and a short lesson from nature given. In such lessons as these the children can be taught the parables of Christ. The truth will be fastened in their minds as a nail in a sure place. 6T 105:1; Ms 74, 1900. [This statement was made in the context of working with the children and youth at campmeetings.]

. . . The use of figures and symbols caused the lessons given to be more firmly fixed in the memory. The great truths of God’s providence and of the future life were impressed on the young mind. CEd 60:2; PP 592:2.

Teachers should copy the example of the Great Teacher, who from the familiar scenes of nature drew illustrations that simplified his teachings, and impressed them more deeply upon the minds of his hearers. The birds caroling in the leafy branches, the flowers of the valley, the lofty trees, the fruitful lands, the springing grain, the barren soil, the setting sun gilding the heavens with its golden beams, --all served as means of instruction. He connected the visible works of the Creator with the words of life which he spoke, that whenever these objects should be presented to the eyes of his hearers, their thoughts might revert to the lessons of truth he had linked with them. CEd 66:3, PP 599:3.

Regular Sleep

Some youth are much opposed to order and discipline. They do not respect the rules of the home by rising at a regular hour. . .

Our God is a God of order, and he desires that His children shall will to bring themselves into order and under His discipline. Would it not be better, therefore, to break up this habit of turning night into day, and the fresh hours of the morning into night? If the youth would form habits of regularity and order, they would improve in health, in spirits, in memory, and in disposition. CG 111:5; Yi 01-28-97:5, 6. [Parts of the above statement are also found in ML 143:5 and Ev 652:1.]

Physical Activity

If the physical powers are not taxed equally with the mental, too much strain is brought upon the latter. Unless every part of the human machinery performs its allotted tasks, the mental powers cannot be used to their highest capability for any length of time. MCP 364:1; CEd 211:1; 5T 522:1.
The physical training will, if properly conducted, prepare for mental taxation. But the one alone always makes a deficient man. *MCP* 362:2; *TM* 241:2; *Lt* 47a, 1895.

Factors Harmful for Development of Memory

There are practices and habits which are harmful and/or impede the functioning of the memory. Overeating robs the brain of the vital force which it needs in processing information. The unnatural stimulation of injurious, fictitious literature injures the memory. Moral impurity lessens the mental powers. Alcoholic drinks destroy the capacity of the mind to retrieve information and weaken its ability to effectively store it.

**Overeating**

You are intemperate in your eating. Frequently you place in your stomach double the quantity of food your system requires. . . your stomach is overworked; and life and energy are called from the brain to work the mill which grinds the material you have placed in your stomach.

This is one great cause of your forgetfulness and loss of memory. *CD* 137:2, 138:1, *Lt* 17, 1895.

**Injurious Reading**

The memory is greatly injured by ill-chosen reading, which has a tendency to unbalance the reasoning powers and to create nervousness, weariness of the brain, and prostration of the entire system. If the imagination is constantly overfed and stimulated by fictitious literature, it soon becomes a tyrant, controlling all the other faculties of the mind and causing the taste to become fitful and the tendencies perverse. *4T* 497:2.

**Moral Impurity**

Defiling habits not only abase the soul, but debase the intellect. Memory suffers, laid on the alter of base, hurtful practices. . . The giving of the faculties to lustful practices disorders the brain and nerve power, and though professing religion, they are not now and never will be agents whom God can use; for He despises the practices of impurity, which destroy the vital nerve energies. This sin of impurity is lessening physical vigor and mental capabilities, so that everything like mental taxation will after a short time become irksome. Memory is fitful; and, O what a loathsome offering is thus presented to God! *FE* 227:1; *SpTEd* 189:1.

**Alcohol**
Don’t let wine tempt you, even though it is rich red, and it sparkles in the cup, and it goes down smoothly. The next morning you will feel as if you had been bitten by a poisonous snake. . . “I must have been hit,” you will say; “I must have been beaten up, but I don’t remember it.” Proverbs 23:31,32,5, TEV.

Look at our young men. And I write now what causes my heart to ache. They have lost their will power. Their nerves are enfeebled because their power is exhausted. . . The wine they have drunk has enfeebled the memory. They are like persons aged in years. The brain is no longer able to produce its rich treasures when required. Te 36:4; Ms 17, 1898.

**Appropriate Use of Memory**

Memory is a gift from God which has been given to use for His glory. The truths of God’s word should be securely stored in our minds that we may share them with the world. By a knowledge of God’s promises, we have comfort and courage to press onward in the Christian life and the weapons necessary to successfully meet Satan’s temptations.

**Advancement of God’s Kingdom**

*Then beware lest thou forget the Lord, which brought thee forth out of the land of Egypt, from the house of bondage.* Deuteronomy 6:12, KJV.

The talents of speech, memory, influence, property, are to accumulate for the glory of God and the advancement of His kingdom. He will bless the right use of His gifts. CS 116:4; RH 04-09-01:19.

*Let your loyalty and good faith never fail; bind them about your neck, and inscribe them on the tablet of your memory.* Proverbs 3:3, REB.

**Memorization of Scripture**

It is of the greatest importance that you continually search the Scriptures, storing the mind with the truths of God. You may be separated from the companionship of Christians and placed where you will not have the privilege of meeting with the children of God. You need the treasures of God’s Word hidden in your heart. ML 28:1; ST 02-06-93:5.

*Take these commandments of mine to heart and keep them in mind.* Deuteronomy 11:18, REB.

Let those who work for the higher classes bear themselves with true dignity, remembering that angels are their companions. Let them keep the treasure house of mind
and heart filled with, “It is written.” Hang in memory’s hall the precious words of Christ. They are to be valued far about gold or silver. _MH 215:3; RH04-06-11:22; 6T 81:3._

Temptations often appear irresistible because, through neglect of prayer and the study of the Bible, the tempted one cannot readily remember God’s promises and meet Satan with the Scripture weapons. But angels are round about those who are willing to be taught in divine things; and in the time of great necessity they will bring to their remembrance the very truths which are needed. _GC 600:0; CSW 39:0; ML 28:4; RH 01-10-07:2._

Only the sense of God’s presence can banish the fear that, for the timid child, would make life a burden. Let him fix in his memory the promise, “The angel of the Lord encampeth round about them that fear him, and delivereth them.” Psalm 34:7. _CG 42:2; Ed 255:4; MC 478:2._

Here are the promises, plain and definite, rich and full; but they are all upon conditions. If you comply with the conditions, can you not trust the Lord to fulfill His word? Let these blessed promises, set in the framework of faith, be placed in memory’s halls. Not one of them will fail. All that God hath spoken He will do. _5T 630:2._

**Wrong Use of Memory in the Learning Process**

Memory should not be used as a substitute for all learning. If this is done, the mind is not trained to use the reasoning powers in thinking independently and making decisions. Thus the conscience is left dormant and becomes incapable of judging right from wrong. Care must also be taken in the amount and suitability of the material to be stored. The brain can become overloaded by too much material. It serves no good purpose to crowd the mind with an irrelevant mass of little-used knowledge.

For ages education has had to do chiefly with the memory. This faculty has been taxed to the utmost, while the other mental powers have not been correspondingly developed. Students have spent their time in laboriously crowding the mind with knowledge, very little of which could be utilized. The mind thus burdened with that which it cannot digest and assimilate is weakened; it becomes incapable of vigorous, self-reliant effort, and is content to depend on the judgment and perception of others. _ED 230:1._

The education that consists in the training of the memory, tending to discourage independent thought, has a moral bearing which is too little appreciated. As the student sacrifices the power to reason and judge for himself, he becomes incapable of discriminating between truth and error, and falls an easy prey to deception. He is easily led to follow tradition and custom. _Ed 230:3; MCP 446:2._